

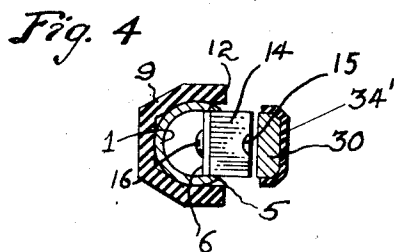
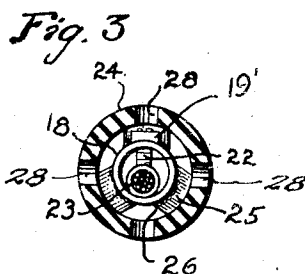
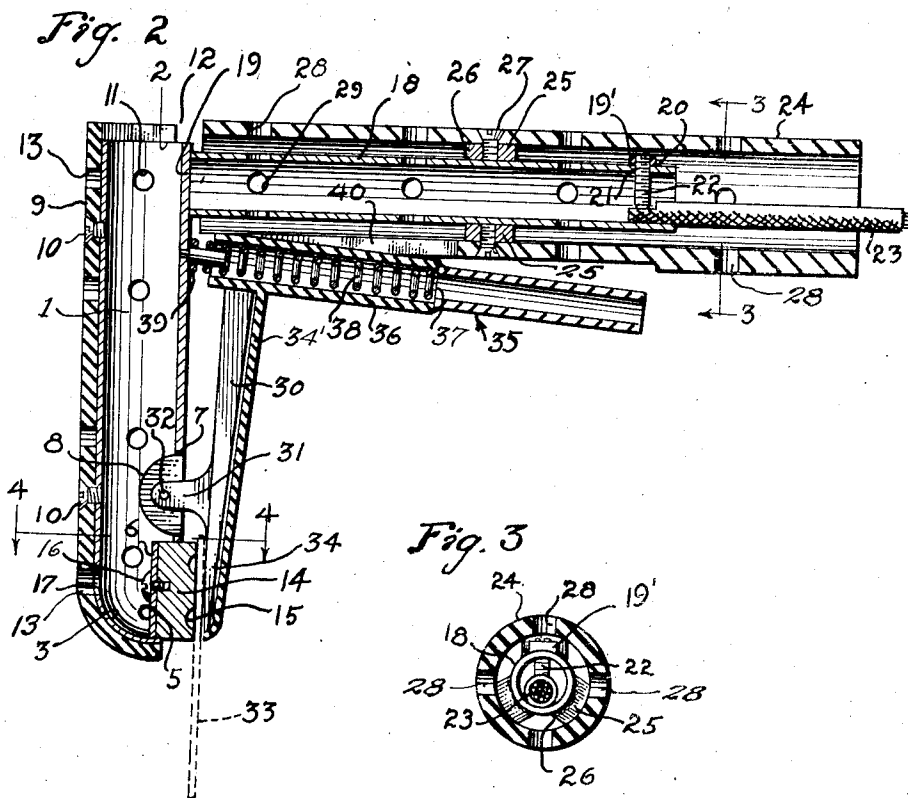
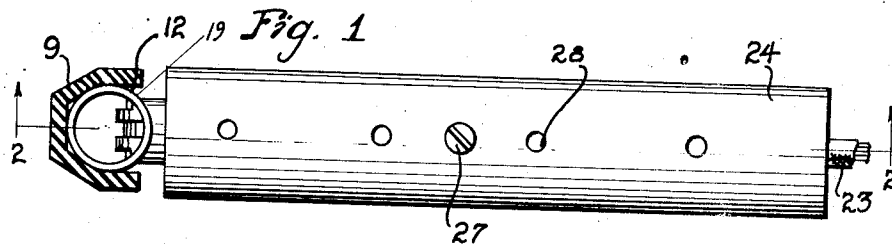
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ELECTRODE HOLDER

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ELECTRODE HOLDER

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2 Claims. (Cl. 219—8)

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Our invention relates to holders for welding electrodes of the general type forming the subject matter of our U. S. Letters Patent No. 2,352,939, dated July 4, 1944, and over which the instant invention is designed as an improvement.

The primary object of the instant invention is to provide an electrode holder of L-shape, as in the aforesaid patent, providing for better reach and clearer vision than straight holders, and which is adapted for rapid and adequate air cooling, and equipped with electrode clamping means tensioned by a powerful spring arranged so as to effect firm clamping of large electrodes, and easily operable manually to effect quick release of the electrodes.

Other and subordinate objects also comprehended by our invention, together with the precise nature of our improvements, and the manifold advantages thereof will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in plan, partly in section, of our improved electrode holder in a preferred embodiment thereof,

Figure 2 is a view in longitudinal section taken on the line 2—2 of Figure 1,

Figure 3 is a view in transverse section taken on the line 3—3 of Figure 2, and

Figure 4 is a view in transverse section taken on the line 4—4 of Figure 2.

Referring to the drawing by numerals, our improved electrode holder, as shown, comprises a tubular jaw-holding member 1 with an open butt end 2 and a partially closed, rounded front end, as at 3. At the front end thereof, and on what constitutes the rear side of the member, said member is recessed to provide a substantially rectangular socket 5 and which is provided with a flat bottom plate 6. A longitudinal slot 7 is provided in the rear side of said member 1 rearwardly of said socket 5 and close thereto and bearing ears, as at 8, upon opposite sides of said slots, for a purpose presently seen.

An insulation sheath 9, of semi-octagonal shape in cross section, covers the front, sides, and front end 3 of said member 1, the shape of said sheath 9 providing for air spaces between the same and said member as best shown in Figure 1. Screws 10 secure the sheath 9 to the member 1. Openings 11 in the sides of said member 1, spaced longitudinally of said member, communicate with air spaces 12 between the sheath 9 and said member to admit air into the member for cooling

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purposes. Longitudinally spaced openings in the front of the sheath 9, and designated by the numeral 13, provide for admitting atmospheric air through said sheath for further cooling said member 1.

A block-like clamping jaw member 14, with the usual electrode accommodating grooves 15 therein, is fitted in the socket 5 and secured to the bottom plate 6 by a single screw 16. Opposite the screw 16 an opening 17 is provided in the front of the jaw-carrying member 1, in line with one of the openings 13 in the sheath 9, whereby a screw-driver may be introduced through said aligned openings to tighten or loosen the screw 16 and for removal of said screw to detach the jaw member 14 for replacement purposes, if desired.

A tubular shank member 18 is welded, as at 19, at the front end thereof to the butt end 2 of the jaw-carrying member 1 to extend from said member 1 at a right angle thereto. A nut 19' is welded, as at 20, on the rear end of the shank member 18, over an opening 21 in said member, for the extension of a screw 22 therethrough to clamp a power lead 23 in said member 18.

A tubular insulation sheath 24 of larger diameter than the shank member 18 surrounds said member and extends beyond the rear end thereof. Spacer blocks 25 welded to the shank member, as at 26, intermediate the ends thereof, space the insulation sleeve 24 from said shank member 18, and screws 27 serve to detachably attach the insulation sleeve 24 to the spacer blocks 25. The insulation sheath 24, as will be clear, provides a handle for the holder. Circular series of air inlet apertures 28 are provided in the insulation sleeve 24 and a similar series of apertures 29 in the shank member 18 to provide for air cooling of said sheath and shank member.

Extending along the rear side of the jaw-carrying member 1 is a bar-like lever 30 provided intermediate its ends with a forwardly extending lug 31 extended through the slot 7 and pivoted, as at 32, to the ears 8 so that the lever may be rocked in opposite directions to move what constitutes its front end into or from clamping relation to the jaw member 14 to clamp, or release, an electrode such as indicated by the dotted lines at 33 in Figure 2. Thus, the front end of said lever 30 forms a movable clamping jaw 34.

An insulation sheath 34' covers the rear and sides of the lever 30 and is formed integrally, at the rear end of said lever, with a tubular hand-grip member 35 extending at a right angle to said sheath 34 alongside the insulation sheath 24. The hand-grip member 35 embodies a front, enlarged,

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barrel section 36 with a rear end internal shoulder 37 therein. A coil expansion spring 38 is provided in the barrel section 36, and interposed between the shoulder 37 and the rear side of the jaw-carrying member 1 with the front end of said spring sleeved over a stud 39 extending from said member 1. In order to arrange the hand-grip member 35 as close as possible to the insulation, handle-forming sleeve 24, said sleeve is provided with a longitudinal slot 40 in the front end portion thereof, in which the barrel section 36 may swing during operation of the hand-grip lever 35.

The jaw-carrying member 1, the shank member 18, and the jaw member 14 are preferably formed of copper or steel. The lever 30 may be formed of any suitable material, and the sheath 9, together with the sheath 3, and the hand-grip lever 35 and sheath 24 are preferably formed of fiber material.

Referring now to the use and operation of the described invention. The spring 38 normally tensions the hand-grip lever 35 and consequently the lever 30 so as to urge the clamping jaw 34 into clamping relation to the jaw member 14, whereby an electrode 33 positioned between said jaw members is securely clamped thereby. With one hand grasping the handle forming insulation sleeve 24, the hand-grip lever 35 may be easily pulled toward said sheath, in opposition to the spring 38, so as to move the jaw member 34 out of clamping relation and release an electrode 33. The butt end of the jaw-carrying member 1 being open, atmospheric air is permitted to circulate through the spaces 12 and openings 11 out of said end to maintain said member cool, and such cooling of the member 1 is further achieved by virtue of the openings 13 through which the member 1 is exposed to atmospheric air. The front end of the shank member 18 being closed, said member is not heated to any appreciable extent by the jaw-carrying member 1, and said shank member 18 is maintained cool by atmospheric air entering the handle-forming sheath 24 through the openings 28 and the ends of said member 24, also by such air entering said member 18 through the openings 29 and the rear end of the member.

The foregoing will, it is believed, suffice to impart a clear understanding of our invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What we claim is:

1. A holder for welding electrodes comprising

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a tubular jaw-carrying member having a butt end and a substantially closed front end provided with a side socket therein, a tubular shank member extending from said butt end at a right angle thereto, a block-like jaw member fixed in said socket, a bar having a front jaw-forming end and pivoted on said jaw-carrying member for rocking in opposite directions to move said jaw-forming end into and from clamping relation to said jaw member, a handle-forming sheath of insulation surrounding said shank member, a tubular hand-grip lever of insulation extending across the rear end of said bar alongside said handle-forming sheath and operable by a hand grasping the handle-forming sheath to rock said bar in a direction to move the jaw-forming end of the bar out of clamping relation, and a coil spring in said hand lever bearing against said jaw-carrying member and tensioning the hand-grip lever against operation in said direction.

2. A holder for welding electrodes comprising a tubular jaw-carrying member having a substantially closed front end, a tubular shank member extending from the rear end of said jaw-carrying member at a right angle thereto, a jaw member detachably attached to one side of the jaw-carrying member adjacent said front end, a movable jaw-forming member pivoted on the jaw-carrying member for operation into and from clamping relation to the attached jaw member, a hand-grip lever for operating said jaw-forming member, an insulation sheath partially surrounding said jaw-forming member and forming air spaces between the same and the jaw-forming member, said jaw-forming member having openings therein for admitting air there-through from said air spaces into the member to cool the same, the rear end of said jaw-forming member being open for circulation of air through the member, and an insulation sheath surrounding said shank member and spaced therefrom to provide a cooling air space between the same and the shank member.

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